Suffolk and Berkshire, reference is made to the now almost forgotten fact that no later than the first half of the last century many of these hounds—and we presume fox-hounds also—were whole-coloured, instead of being of the tripartite "hound-colour" with which we are now familiar. Reddish was the prevalent tint, with a tinge of brownish-grey along the back, so that the hound was very similar in colour to the hare of which it was in pursuit. This, of course, has an important bearing on the ancestral stock from which our modern hounds are derived, and tends to confirm the view of Bell as to the derivation of these animals from a bloodhound stock.

As the editor admits in his preface, some objection might legitimately be raised to the inclusion in the volume of an article by Lord Delamere on lion-shooting in East Africa, and of another by Lord Walsingham on Spanish ibex hunting, since if these are admitted it is somewhat difficult to see why big game shooting in general was not included. Taking, however, the facts as they are, we find some very interesting points in Lord Delamere's narrative—notably the statement that wart-hogs, when chased by lions to the deserted aard-vark holes, in which they often take up their abode, invariably enter backwards, so as to present their formidable tusks to an assailant. In the course of his account of a hunting trip to the haunts of the Spanish ibex, or wild goat, Lord Walsingham records many interesting points in connection with the fauna and flora of the districts traversed.

With this we take leave of an attractive volume which ought to occupy a handy position in the library of every British sportsman R. L.

OUR BOOK SHELF.

Theoretical Mechanics. An Elementary Text-book. Second edition. By L. M. Hoskins. Pp. xi+456. (Published by the author, Stanford University, Cal., 1903.) Price 3 dollars.

WE have here a very clear and lucid exposition of the fundamental principles of mechanics, presented always with incisive logic, in a simple manner, and enforced and illustrated at frequent intervals by well selected examples.

The book is divided into three parts, of which the first deals with statics, and includes a chapter on gravitation and the attraction of spherical shells. The second part is concerned with the dynamics of a particle, and part iii. treats of the motions of systems of material particles and of rigid bodies.

The subject is treated mainly by analytical methods, an elementary knowledge of the calculus being assumed. But the vector nature of the subject is always kept prominently to the fore, and the vector significance of the various terms in the dynamical equations is brought well home to the student by ample illustrations and descriptions. The book opens with a special chapter on vectors, and vector equations are freely employed throughout, verging sometimes on the use of vector products, as, for instance, when establishing the relations which exist amongst the various quantities in the case of the transformation of axes in the instructive chapter on relative motion which concludes the volume, and which has been added since the first edition.

Attention is mainly confined to motion of translation in space, and to the general case of plane motion, general motion in three dimensions being only casually alluded to. This seems to us a wise arrangement, as, in the space available, it allows the treatment to be very full and complete.

The C.G.S., the poundal-pound, and the "engineers'" systems of units are all clearly explained. The author, however, seems to be under some misapprehension as to the unit of force in the engineers' system. He says this varies with the locality on account of the variation of gravitation, but that the system could be made dynamical by specifying the locality. In this country, at any rate, such specification is made, and the engineers' system is thus as strictly absolute as the C.G.S. or the poundal-pound systems.

Considering the importance of harmonic motion in its many applications, as in electricity, in problems on balancing, in harmonic analysis, &c., many readers would have welcomed a special chapter devoted to the subject, including some reference to rotating vectors.

In a treatise like the present, it would seem highly desirable that a short account of the experimental verification of fundamental laws should be given, and the student be directed to carry out the experiments personally in the laboratory. But there is little room for adverse criticism in this most excellent text-book, which is one of the best on the subject that has recently appeared, and cannot fail to give satisfaction wherever used.

Atlas des Erdmagnetismus für die Epochen 1600, 1700, 1780, 1842 *and* 1915. By Dr. H. Fritsche, Director emeritus des K.R. Observatoriums in Peking. (Riga: Müllerschen Buchdruckerei, 1903.)

THIS work consists of a series of charts of equal lines of magnetic declination, inclination, and horizontal force for the five epochs 1600, 1700, 1780, 1842 and 1915, calculated by the author with the assistance of the Gaussian theory.

In his introduction he discredits the accuracy of the charts of the epochs hitherto published by Hansteen, van Bemmelen, Sabine and others as being the results of observation only, many of such observations being defective, and the lines drawn without the help of any theoretical groundwork. There is a mistake here as regards Sabine's charts of the Arctic and Antarctic regions, as the Gaussian lines calculated for 1840 were largely used in their construction. Nevertheless, the author has spared no pains in his endeavour to replace what he condemns by something better, hence the present charts.

Considering the existing knowledge of terrestrial magnetism as regards the secular change of the magnetic elements, and our limited knowledge from observation of the conditions in the southern parts of the earth, the author appears to be somewhat premature in providing charts of inclination and force for the epochs 1600 and 1700, especially when so little was known of either element before the early years of the last century.

From the lengthened period during which the declination has been observed, the means exist for comparing the theoretical results of these calculated charts with good normal observations. Thus at Cape Town we find for the epochs 1842 and 1915 a difference in declination of $-1°.5$ and $+2°$ respectively, and at other well-known places similar differences.

Again, these charts indicate that the north magnetic pole moved in a south-easterly direction nearly 700 miles in the 315 years since 1600, some 93 miles of these being traversed between 1842 and 1915, whereas observations during the latter period indicate that the pole moved in a north-westerly direction. The south

magnetic pole is declared to have moved about 800 miles in a north-westerly direction between 1600 and 1780, then about 400 miles in a south-easterly direction between 1780 and 1915.

The remarkable results thus given in these charts can hardly be accepted until observation has done its work and provided a better basis of calculation than that at the disposal of their author.

The Wonderful Works of God. Pages from the Book of Nature. By J. Polkinghorn. Pp. iv+156; illustrated. (London: Society for Promoting Christian Knowledge, 1903.) Price 2*s*.

THE purport of the book, it is said, is to awaken an interest in the marvels of creation, and perhaps this might have been done without the introduction of quite so many "pious reflections." Be this as it may, the author might at least have taken care that all his statements were up to date, and at the same time have avoided the introduction of misleading illustrations. As an example of the former failing, we may refer to the statements (p. 29) that sponges are included in the Cœlenterata, and (p. 94) that a few birds probably hibernate (*vide* A. Newton, "Dictionary of Birds," p. 928). As regards the second point, we may direct attention to the figure on p. 29, in which the shell borne by a soldier-crab presents no resemblance to that of any mollusc with which we are acquainted. Although exception may be taken to the mode of treatment, the purport of the book is deserving of all commendation.

Riviera Nature Notes. Second edition. Pp. xv+402. (London: Bernard Quaritch, 1903.)

THIS volume will be a welcome addition to the library of everyone who is interested in the old-fashioned hobby of field natural history or its modern substitute of "nature-study." The first edition, which was published in 1898, was a delightful book, but it left much to be desired in the matter of paper, printing, illustrations, correction of misprints, and similar matters of general detail. In all these respects the present volume is quite a different book from its predecessor, and though a few misprints still survive, it is evident that no pains have been spared in producing a well printed book, the illustrations in which are quite works of art. The anonymous author states that he is a schoolmaster by profession, and that the book was written as a recreation, and with no intent to produce a scientific treatise. But those who have visited the shores of the Mediterranean will know that the fauna, the flora, and the folklore of this region possess an individuality of which no adequate impression can be conveyed by exact scientific descriptions, but of which a much better idea can be obtained from the descriptions and illustrations given by one who is evidently familiar with every nook and corner of the district. We cordially agree with the last words of the preface:—"But I may, perhaps, venture to plead that there are many recreations even less profitable than writing notes upon the Natural History of the Riviera.'

The Square Circled. By P. O. P. Pp. 44. (Edinburgh: E. and S. Livingstone, 1903.)

MANY writers have given approximate geometrical constructions for straight lines equal in length to arcs of circles, and some of these are so simple that it seems a pity they are so rarely seen in text-books. This remark in no way applies to the constructions given in the present book. Most of the figures are very involved and complicated, containing between thirty and forty lines. If the methods really did lead to an exact and not merely an approximate construction for squaring the circle, the use of ruler and compasses would introduce errors far greater than those which would arise from taking even such a rough value for π as $3\frac{1}{7}$. It is a pity that the author before writing this book did not consult a mathematical friend. Had he done so he would have been told that his "V-shaped curve" is a portion of a cycloid, and he would not have issued the book in its present form.

The Garden Diary and Calendar of Nature. With Gardening Directions by Rose Kingsley and Preface by G. A. B. Dewar. Pp. x+Diary. (London: George Allen, 1904.)

A FEW nature and other notes, together with directions as to the month's work in the garden, precede the diary for each month. Every day throughout the year is provided with an appropriate poetical quotation and a space in which to record personal observations of nature in the garden and elsewhere. Altogether a pleasing compilation.

LETTERS TO THE EDITOR.

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

Oxford Science.

To the report of a lecture recently delivered in Oxford (NATURE, vol. lxix. p. 207) Prof. Perry appends a footnote in which he states that if he were to endow a professorship in some definite branch of science at Oxford, the authorities would appoint a man who never had done, and who never could be expected to do, any research work, and whose highest ambition would be to act zealously as the bursar of his college! As some of the readers of this report might regard this statement as being literally true, it is as well it should be contradicted. Of the fourteen full science professors at Oxford, only one is, or ever has been, a college bursar. In fact, nearly all the professors are eminent men, who by their research work have contributed in no small measure to the advancement of science. All are fellows of the Royal Society, and nearly all have served on its council.

Prof. Perry's statement that Oxford turns out very little research work of any kind is likewise unsupported by facts. As can be seen from the "Reports of University Institutions" (published by the Clarendon Press), the amount of research work done in Oxford is increasing every year. To take but a few instances, we find that, in 1902, workers in the department of physiology published eighteen original memoirs, those in the department of astronomy eleven, and those in the department of comparative anatomy ten memoirs, whilst from the Hope department of zoology two bulky volumes of collected researches have been published within the last few months. In fact, I challenge Prof. Perry to name a single professor, lecturer or demonstrator, in the departments of physiology, comparative anatomy, zoology, geology, botany, physics (electricity), astronomy or mineralogy, who is not engaged upon research at the present time, and who has not published original work during the last year or two. Again, many of the colleges are subsidising research by electing research fellows rather than fellows by examination. Of such fellows—all elected within the last few years—it will suffice to mention the names of Messrs. Arthur Evans and D. G. Hogarth, whose exploration work in Crete is known to all, and Messrs. Grenfell and Hunt, equally well known for their work in Egypt.

The statement that Oxford hates science does not seem to be borne out by the fact that, of the total yearly revenue of the university (as apart from the colleges), more than 10,000*l*., or a seventh part of the whole, is devoted to the upkeep of the science departments and the payment of science readers and lecturers. Many of the colleges are no less liberal in their support of science and research. To